

We Claim:

1. A glass comprising in mole percent based on oxide:

SiO ₂	55-70
PbO	30-38
Na ₂ O	>0-4.5
K ₂ O	0-2.5

and essentially free of TiO₂.

2. A glass according to claim 1, further comprising in mole percent based on oxide:

Al ₂ O ₃	0 - 5.0
ZrO ₂	0-5.0
Sum Al ₂ O ₃ + ZrO ₂	>0-8

3. A glass according to claim 1 further comprising in mole percent based on oxide:

ZnO	0-5.0
As ₂ O ₃	>0-0.4

4. A glass comprising in mole percent based on oxide:

SiO ₂	49-60
PbO	33-45
Na ₂ O	>0-3.5
K ₂ O	0-2.5

and essentially free of TiO₂.

5. A glass according to claim 4, further comprising in mole percent based on oxide:

Al_2O_3	0-5.0
ZrO_2	>0-5.0
Sum $\text{Al}_2\text{O}_3 + \text{ZrO}_2$	>0-8

6. A glass according to claim 4 further comprising in mole percent based on oxide:

ZnO	0-5.0
As_2O_3	>0-0.4

7. A glass made by adding together and melting, in mole percent:

SiO_2	55-70
PbO	30-38
Na_2O	>0-4.5
K_2O	0-2.5

and essentially free of TiO_2 .

8. A glass made by adding together and melting, in mole percent:

SiO_2	49-60
PbO	33-45
Na_2O	>0-3.5
K_2O	0-2.5

and essentially free of TiO_2 .

9. A glass comprising in mole percent based on oxide:

SiO ₂	49-70
PbO	30-45
Na ₂ O	0-5
K ₂ O	0-3
Sum Na ₂ O + K ₂ O	>0-5
Sum B ₂ O ₃ + Al ₂ O ₃ + Y ₂ O ₃ + La ₂ O ₃ + ZrO + + MoO ₃ + TaO ₅ + ZrO ₂ + WO ₃ + In ₂ O ₃	0-10

and essentially free of TiO₂.

10. A glass comprising in mole percent based on oxide:

SiO ₂	49-70
PbO	30-45
Na ₂ O	0-5
K ₂ O	0-3
Sum Na ₂ O + K ₂ O	>0-5
Sum ZrO ₂ + Al ₂ O ₃	>0-8

11. A glass according to claim 10 essentially free of TiO₂.

12. A glass made by adding together and melting, in mole percent.

SiO ₂	49-70
PbO	30-45
Na ₂ O	0-5
K ₂ O	0-3
Sum Na ₂ O + K ₂ O	>0-5
Sum B ₂ O ₃ + Al ₂ O ₃ + Y ₂ O ₃ + La ₂ O ₃ + ZrO + + MoO ₃ + TaO ₅ + ZrO ₂ + WO ₃ + In ₂ O ₃	0-5

and essentially free of TiO₂.

13. A glass comprising lead and silicon, having a SOC of 1.00 to 2.00 and a CR of 3 or less in combination with a SR of 5 or less.
14. A glass comprising lead and silicon, having a SOC or less than 1.00 and a CR of 4 or less in combination with a SR of 51 or less.
15. A glass according to claim 1 having a SOC of 1.00 to 2.00 and a CR of 3 or less in combination with a SR of 5 or less.
16. A glass according to claim 4 having a SOC of less than 1.00 and a CR of 4 or less in combination with a SR of 53 or less.
17. A glass according to claim 9 having a SOC of less than 2.00 and a CR of 3 or less in combination with a SR of 5 or less.
18. A glass according to claim 9 having a SOC of less than 1.00 and a CR of 4 or less in combination with a SR of 53 or less.
19. A glass according to claim 2 further comprising in mole percent based on oxide:

ZnO	0-5.0
As ₂ O ₃	>0-0.4

Add
As₂